New Products

Test

Editor: Conrad Zagwyn, LTX Corp., LTX Park at University, Westwood, MA 01090.

MTS offers mechanical-test system controllers

MTS Systems announced a family of controllers to automate mechanical testing systems targeted for automotive, aerospace, and rail industries.

The controllers are configured into specific software and hardware packages to meet each client's needs. Generally, the systems provide profile generation and data acquisition, classification and monitoring, and test data analysis. A basic system includes single test station capability but can be expanded to control up to four independent or multichannel tests simultaneously.

Applications packages include component fatigue testing, structural fatigue testing, field data playback, multichannel data acquisition analysis, and data acquisition and classification systems.

Each has a true multitasking real-time operating system, menu-driven selection, and test set-up routines.

For more information, contact MTS Systems, Box 24102, Minneapolis, MN 55424; (612) 937-4000.

Reader Service Number 20

ZIP video I/O converter speeds processing

Mercury Computer Systems has announced ZIPVID, a video I/O converter that combines with the ZIP 3216 array processor to speed video acquisition during high-speed processing of sophisticated arithmetic algorithms.

ZIPVID digitizes an image from an RS-170 input and passes it directly to the array processor's memory in real time, eliminating the need for an external frame-grabber. The video I/O converter also generates composite video images with resolution of 640×480 pixels.

The ZIPVID is a single Multibus board that connects directly to the ZIP 3216, which executes algorithms such as 2D FFTs, convolution, image rotation, and erosion dilation at a rate of 30 million instructions per second.

ZIPVID costs $3000 in single units, with quantity discounts to $1950. The ZIP 3216 costs $8000, with discounts to $5200.

For more information, contact Mercury Computer Systems, 600 Suffolk St., Lowell, MA 01854; (617) 458-3100.

Reader Service Number 22

16K SRAM available from Motorola

Motorola has announced the availability of a 16K static RAM, the MCM6168, in 45-, 55-, and 70-nanosecond access times. These SRAMs provide the speed needed for cache memory, video applications, engineering workstations, and automated test equipment.

CMOS circuitry offers a maximum of 80 milliamps in active mode, five milliamps in TTL-level standby, and two milliamps in CMOS input-level standby. Use of a single +5 volt power supply eliminates the need for external clocks or timing probes.

The MCM6168 is packaged in a 300-mil, 20-pin plastic dual-line package with JEDEC standard pinout. Piece pricing in quantities of 10,000 is $8.25 for the 45-nanosecond SRAM, $6.00 for the 55-nanosecond version, and $5.50 for the 70-nanosecond memory.

For further information, contact Motorola Memory Products Division, 3501 Ed Bluestein Blvd., Austin, TX 78721; (512) 928-7505.

Reader Service Number 23

Circuit simulator runs on IBM PC

A version of the standard electrical circuit simulator Spice2 runs on IBM PCs using PC-DOS. AllSpice, from Acotech, incorporates all the simulation algorithms included in the original mainframe system, including distortion analysis. AllSpice can simulate more than 120 transistor devices in either the PC or the PC/XT versions, the firm said.

It uses the standard UC Berkeley Spice2 version 2G.7 and requires 512K bytes of memory and an 8087 math coprocessor in the IBM PC or compatible microcomputer. The package also requires DOS version 2.1 or higher. AllSpice costs $250, including the user manual.

For more information, contact Acotech, 713 Santa Cruz Ave. #2, Menlo Park, CA 94025; (415) 325-7999.

Reader Service Number 21

DMST 2002 uses new micro-based VLSI test strategy

Digalog Systems has introduced the DMST 2002, a new version of the company's 2000 series functional test system. The 2002 features a new approach for microprocessor-based VLSI board testing, improved signal source and measurement capabilities, an optional Winchester hard disk, and a 14-inch VDT.

The new testing strategy uses the tested unit's own microprocessor to run functional test programs selected by the 2002. Test programs are stored in ROM on the unit's board or are applied from EPROM memory in a close-coupled functional test adapter module. Standard serial or parallel interfaces handle comunication between the tester and the unit.

The 2002's analog source board includes two channels of arbitrary waveform generators, each with two complementary TTl pulse output channels. The generators have 12-bit by 2K word memory with programmable clock rates from 10 MHz to 10 Hz capable of producing any type of analog waveform. Digital pulse streams with programmable amplitude and duty cycles can also be produced up to 5 MHz.

The amplitude measurement system modes include dc, filtered dc, RMS, and dc plus RMS, as well as triggered amplitude and equivalent time digitizing on waveforms and pulse streams to 10 MHz.

The time measurement system is based on the 100 MHz TCXO reference and features 10-nanosecond interval resolution. The 2002's measurement display electronics provides a real-time waveform display with marked measurement points.

For more information, contact Digalog Systems, 3180 S. 166th St., New Berlin, WI 53151; (414) 797-8000.

Reader Service Number 24

Pattern generation card debugs hardware

Northwest Instrument Systems has announced its Model 2300 interactive pattern generator, which can either be used as a standalone debugging system or integrated with the MicroAnalyst 2000 logic analysis workstation.

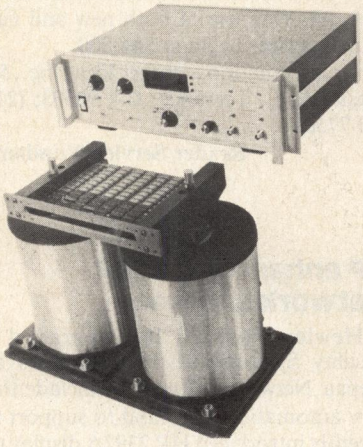
The pattern generator provides controlled input to stimulate the system under test while logic analysis monitors the sequence of events at key points in the system.

The Model 2300 can be programmed, through disk-based automatic setups, to simulate worst-case microprocessor bus timing—before initial microprocessor samples are available. The operating software can run standalone under the IBM-PC DOS or concurrently with the state and timing analyzers under IBM's TopView multitasking environment.

The Model 2300, including a clock controller board and a 32-channel simulation board, costs $5900. Additional 32-channel boards cost $2550 each. The complete MicroAnalyst station is priced at $23,025.

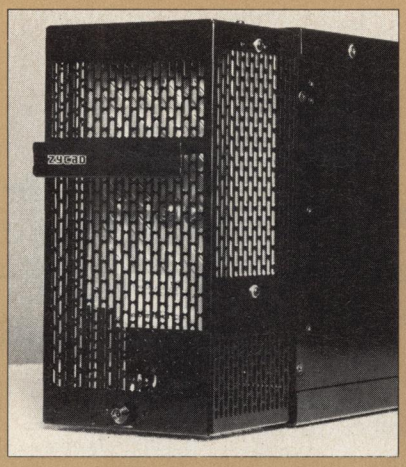
For more information, contact Northwest Instrument Systems, 15201 N. W. Greenbrier Pkwy., Suite 140, Beaverton, OR 97006; (503) 654-5151.

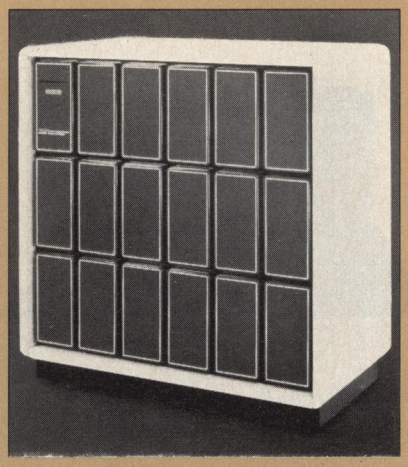
Reader Service Number 25



Vibration Test Systems has introduced a printed circuit board random screening test system that uses two VTS shakers working in tandem through a single control unit. The RCS-1's design permits the use of smaller shakers and offers a broad screen capability in a compact system. The system can accommodate boards ranging in size from 7.5 to 18 inches. A system designed to produce six grms with a three-pound board costs less than $10,000. For more information, contact Vibration Test Systems, 10246 Clipper Cove, Aurora, OH 44202; (216) 562-5729.

Reader Service Number 26





The Zycad Fault Evaluator, left, available as a field upgrade to the company's Logic Evaluator, right, is claimed to perform fault analysis at speeds up to 1000 times greater than software simulators.

Zycad announces Fault Evaluator

Richard Landry, Managing Editor, IEEE Micro

Zycad Corporation last month announced the Fault Evaluator as an upgrade to its present model, the Logic Evaluator. According to Zycad president Richard E. Offerdahl, the combined package offers a "project-level simulation tool" for designs of up to 100,000 gates or 16,000 concurrent faults per pass at speeds approximately 1000 times faster than software simulators. The Logic Evaluator is rated at speeds from 500,000 to 16 million events per second, depending upon model.

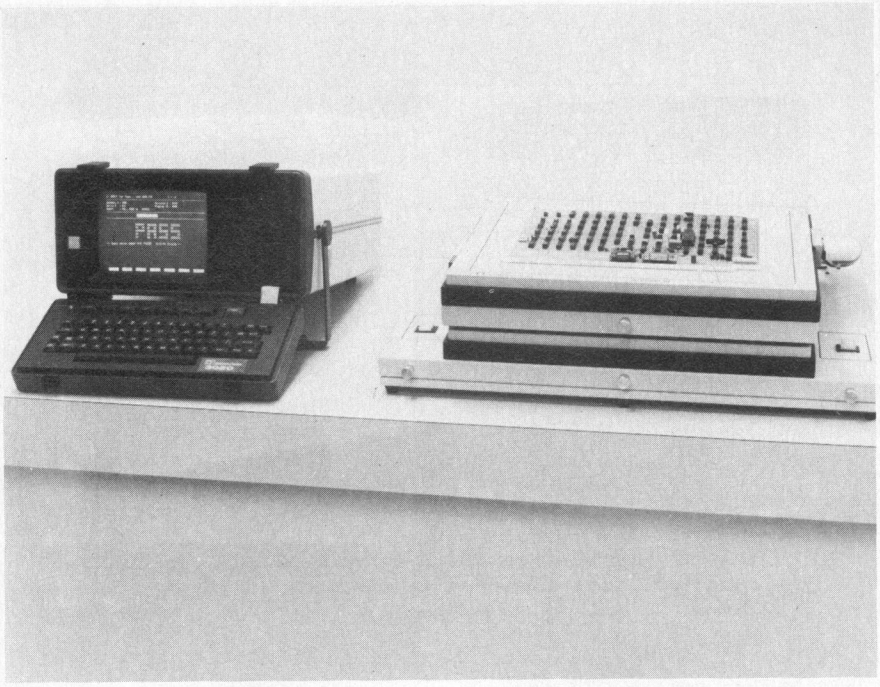
According to Offerdahl, the Fault Evaluator is based on a concurrent fault simulation algorithm implemented with a proprietary, high-speed pipeline architecture. The Fault Evaluator is supported by the company's Zilos software, a version of SimuTec's Silos. Operating in either a menu-driven or command-based mode, the software provides the capability for interactive simulation with a transparent interface to the Fault Evaluator. Translators for Tegas, CAE Systems, Daisy, IBM, Mentor, and Apollo systems to either Zilos or to ZIF, the Fault Evaluator's internal object code, are also available.

Zycad reported the following benchmark results for designs described in Zilos: for a 2500-gate design, 3200 faults using 462 vectors were simulated in 30 seconds, and 8600 faults in 71 seconds; for a 5800-gate design, 2618 faults using 9259 test vectors were simulated in 8.2 minutes. In a benchmark against the Tegas-5 running on the Vax 11/780, the Fault Evaluator simulated a 2538-gate design with 3137 faults and 462 test vectors for 65 percent fault coverage in 30 seconds, as compared with a reported 10 hours for the Tegas-5.

Responding to criticism that the Fault Evaluator substitutes long compilation time for long runtime, David Allenbaugh, Zycad project manager, said, "This is a myth. Whenever you take care of one portion of the problem, the other part naturally pops into view." Allenbaugh claimed that, using Zilos or some other language for which a translator exists, total throughput time remains "very fast." For a single 8000-gate array, compilation time for Zilos on a Vax 11/750 was 2.5 minutes, versus 6.3 minutes on a Daisy system; simulation time was 1.9 seconds. For 16, 8000-gate arrays, total compilation time was 25 minutes, and simulation time was 18 seconds. For a 10,000-gate design executed on a Vax 11/780, compilation ran at a rate of 110 gates per second, as compared with 50 gates per second on an Apollo 300.

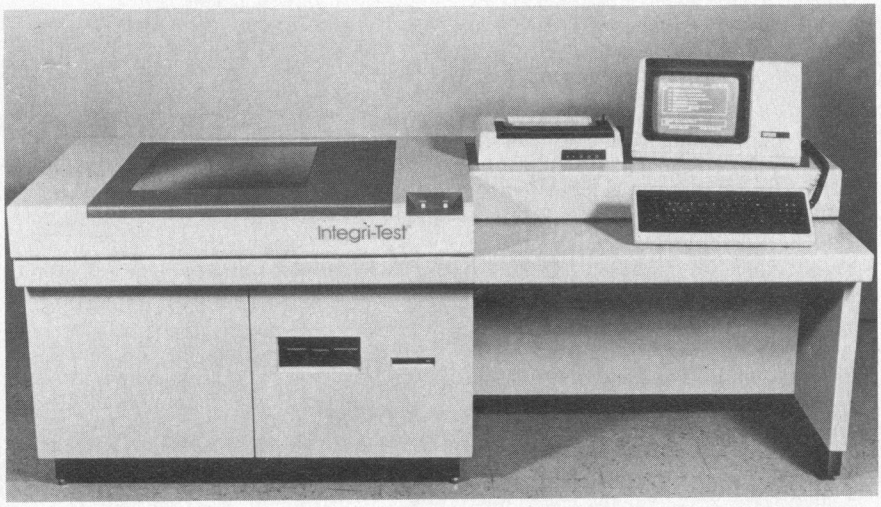
The Fault Evaluator is available for between $450,000 and $2 million, depending on model. Zycad's address is 1315 Red Fox Road, Arden Hills, MN 55112; (612) 631-3175.

Reader Service Number 27



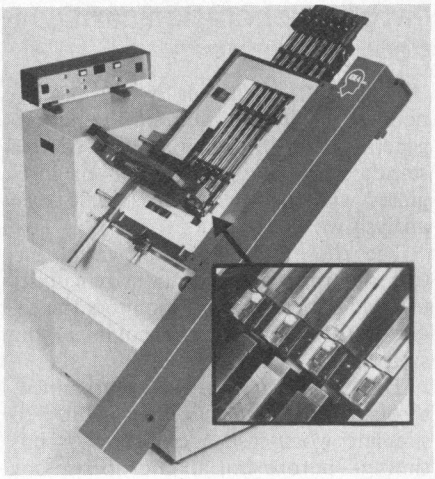
Computest has introduced the Series 30 lines of manufacturing defect analyzers. The Model 3020 can test up to 512 points, while the Model 3500 can examine as many as 2048. Both models can measure resistance over a range of 10 to 250K ohms, capacitors for 0.01 to more than 10,000 microfarads, as well as diode and active component orientation. They also include a probe to identify any node and pin translation to identify a wrong or failed component by name or pin designation. Starting prices are less than $15,000. For more information, contact Computest, 6055 Grissom Pkwy., Titusville, FL 32780; (305) 268-3410.

Reader Service Number 28



Kollmorgen's Electronic Equipment Division has added auto-ranging resistance testing to its Integri-test 4510 fixtureless bare circuit board tester. The resistance mode verifies values of all specified nets against assigned values in a testing range of 0.01 to 10M ohms. The measurement range is 0.01 to 1 ohms, 0.01 to 100 ohms; 0.01 to 1K ohms; and 0.01 to 1M ohms. Accuracy is ± 0.1 percent of reading, the company said. Integri-test uses a DEC RT-11 operating system on a PDP 11/23 with 256K RAM. For more information, contact Kollmorgen, 320 S. Service Rd., Melville, NY 11747; (516) 391-4100.

Reader Service Number 29



Idea Inc.'s PLCC/LCC Auto Loader inserts boards for burn-in operations as fast as 6000 devices per hour.

Device auto-loads PLCC/LCC burn-in boards

Idea Inc.'s PLCC/LCC Auto Loaders automatically insert up to 6000 devices per hour for burn-in operations. The auto loaders can handle multiple board styles that have automatic sockets.

Force-sensing and force-relieving insert heads protect the carriers from package damage. The automation relieves manual-insertion problems such as misorientation of parts and electrostatic discharge. The insert head accommodates misaligned sockets by 0.05 inches on either the x or y axes, allowing use of both new and used boards. Prices begin at $44,800.

For information, contact Idea, Inc., 500 Alaska Ave., Torrance, CA 90503; (213) 320-7750.

Reader Service Number 30

HP enhances Q-STAR Network software

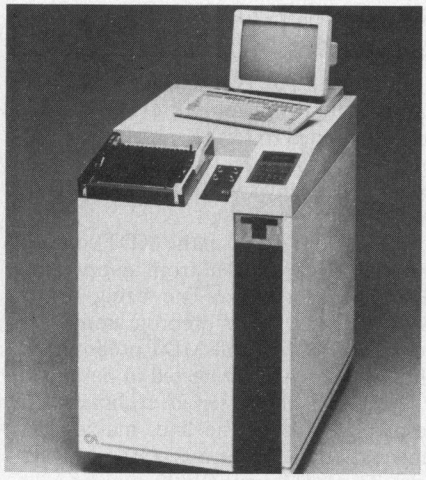
Hewlett-Packard has upgraded its Quality Systems for Test, Analysis and Repair Network software to include three new automatic alarms and to support the recently introduced HP 2392A display terminal on the HP 3065 board-test system.

The new alarms alert the operator when overall-yield, sample-yield, and consecutive-failure problems are encountered. The current software has a looping-board alarm. The new automatic alarms have user-definable thresholds.

The new HP 2392A terminal includes a 12-inch green phosphor screen, four pages of memory, local edit keys, and a detachable low-profile keyboard.

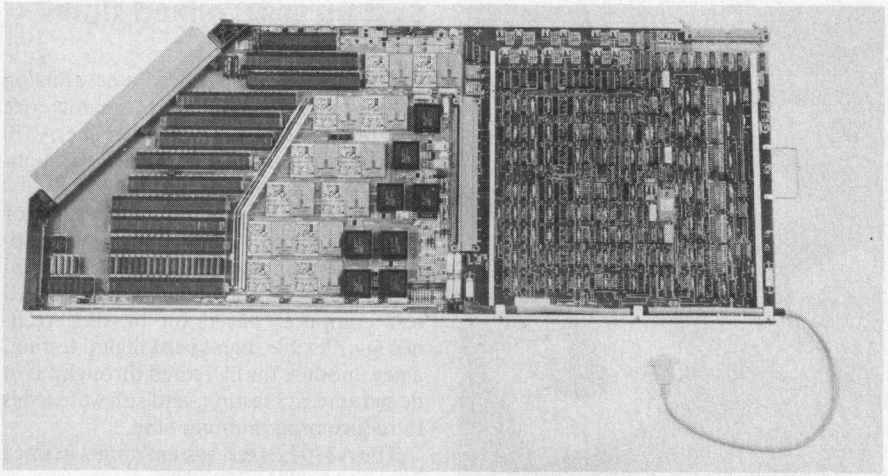
For further information, contact Hewlett-Packard, 1820 Embarcadero Rd., Palo Alto, CA 94303.

Reader Service Number 31



Computer Automation has introduced a new series of compact testers for price-sensitive users. The new models are aimed at companies with high-volume, homogeneous production that do not require modular expansion to increase functional testing throughput. The testers may optionally include a high-speed data link to connect the tester to the modular Marathon test system, an additional VDT for programming without interrupting tests, simulation, and a management information system. The options are available in four prepackaged configurations. For more information, contact Computer Automation, 2181 DuPont Dr., Irvine, CA 92713; (714) 833-8830.

Reader Service Number 32



Hewlett-Packard's hybrid test card combines analog and digital board-testing capabilities for the HP 3065.

New card combines analog, digital board testing

Hewlett-Packard introduced a new hybrid card using advanced pin electronics and associate software that combines analog and digital capabilities for board testing. Advantages include increased test speed, reliability, and drive current for testing logic families such as Fast, AS, and ALS, according to the company.

The new card enhances the HP 3065 board-test system. A software upgrade will be available in the third quarter this year at no cost to increase hybrid-point capabilities. The card is compatible with the existing HP 3065 hardware and software.

The hybrid card and its associated software costs $6700. It replaces a digital card priced at $5700 or an analog card priced at $3600. Availability is about eight weeks ARO.

For more information, contact Hewlett-Packard, 1820 Embarcadero Rd., Palo Alto, CA 94303.

Reader Service Number 34

High volume testing provided for digital circuits

Three new products allow Hewlett-Packard data generators and analyzers to be configured for high-volume testing of small- and medium-scale ICs in incoming-inspection and production-test applications.

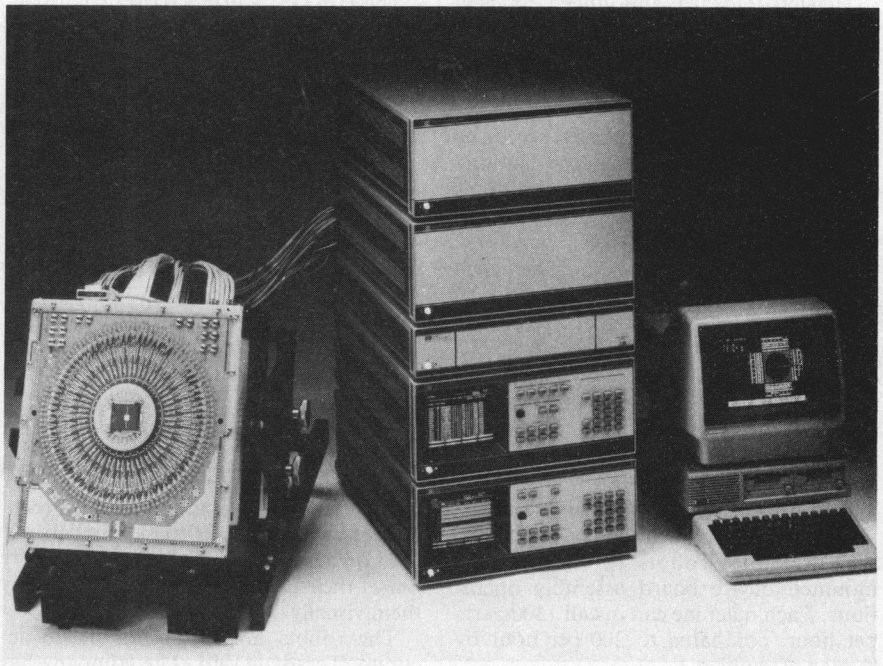
The HP 15424A performance board, the HP 15425A test head, and the HP 81800A software package—in combination with the HP 8180A data generator, the HP 8182A data analyzer, and the HP 8181A data-generator extender—make up the HP81800S digital circuit test system.

The system allows the installation of 64 timing and non-return-to-zero channels for the characterization of VLSI devices such as custom ICs and gate arrays. It features data rates up to 50 MHz.

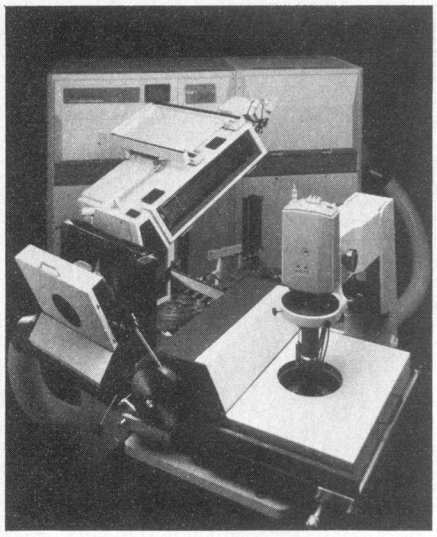
System prices begin at $30,000, depending on the configuration. Availability is estimated at 14 weeks ARO.

For more information, contact Hewlett-Packard, 1820 Embarcadero Rd., Palo Alto, CA 94303.

Reader Service Number 33



Three enhancements to existing HP data generators and analyzers allow the HP 81800S system to test high volumes of small- and medium-scale ICs.



Teradyne's A370 LSI test system combines analog and digital testing capabilities.

System tests mixed-signal devices

Teradyne has announced a new analog LSI test system designed to characterize and test mixed-signal devices. The A370 provides up to 50-percent greater throughput than its predecessor, the A360.

The A370 is based on Teradyne's vector bus architecture, designed as an A360 option to test chips with analog and digital components. It also includes a high-speed test computer based on bit-slice technology, flexible high-speed digital testing, a new module for increased throughput in dc parametrics testing, and software tools to reduce programming time.

The A370 LSI test system ranges in price from $115,000 to $500,000.

For more information, contact Teradyne, 32 Harrison Ave., Boston, MA 02118; (617) 482-2700.

Reader Service Number 35

RAD unveils self-programming field tester

RAD Computers has developed a portable, self-programmable MDT field tester designed to test terminals and computer ports under any protocol, using any code, and at any speed between 1200 and 9600 baud.

A PROM plugged in the MDT contains a dialogue prerecorded from an operating line to diagnose the line being tested. Several tests can be preprogrammed on separate PROMs. The MDT preprograms the PROM when connected in parallel.

The MDT allows service technicians to test both ends of the line, making it a universal data communications test system. The MDT costs $1000.

For further information, contact Techline, 871 Seventh Ave., Suite 32, New York, NY 10019; (212) 333-5689.

Reader Service Number 36

Vax Pascal-T announced for Teradyne memory testers

A Vax Pascal-T compiler is available for Teradyne's J380 series of memory test systems, the company announced. The compiler runs on a Vax 11/750 or larger computer with the VMS 3.0 or higher operating system.

Device test programs are created, maintained, and compiled on the Vax, then downloaded to a test system. The compiler accepts programs written in Teradyne's Pascal-T language and generates a listing file and an object file.

The compiler software package includes the Vax Pascal-T compiler, a Vax-to-Teradyne computing controller file-transfer program, a computing controller I/O handling utility, a Vaxcom-to-Teranet format file conversion utility, and documentation.

For more information, contact Teradyne, 660 Summer St., Building 114, Box 120, Boston, MA 02210.

Reader Service Number 37

Multimeter extends resolution to 7½ digits

Hewlett-Packard announced its new HP 3457A multimeter, which provides sytems and bench users seven measurement functions, extended resolution to 7½ digits, and scanner capabilities.

The 3½-6½-digit multimeter returns reading rates that vary from less than one every second for extremely stable readings to 1350 per second for high-speed measurement bursts.

New to the multimeter are frequency and period funcitons. These were added to its previous dc and ac volts, dc and ac current, and resistance functions.

The HP 3457A offers basic dc volts accuracy of up to 5 ppm. The maximum amplitude through the input terminals is 300 volts rms. Two optional plug-in scanner cards allow multiplexed access of as many as 10 signal channels.

One of the optional scanners, the HP 44491A, offers eight two-wire channels and two current actuator channels. It can switch channels at a rate of 30 channels per second with a maximum amplitude of 250 volts in either ac or dc.

The other scanner, the 44492A, can scan up to 300 channesl per second with 10 two-wire channels. The reed-relay multiplexer assembly can measure period signals up to 125 volts.

The multimeter can format ASCII, 16-bit binary, and 32-bit binary data. It also includes a buffer memory that lets the user transfer memory to a computer at rates of up to 3000 bytes per second.

The HP 3457A digital multimeter costs $2800. The HP44491A and HP44492A plug-in scannrs cost $450 each.

For more information, contact Hewlett-Packard, 1820 Embarcadero Rd., Palo Alto, CA 94303.

Reader Service Number 38

Robots install surface-mounted devices on boards at Teradyne

Teradyne's Semiconductor Test Division in Agoura, California, has added two pick-and-place robots for its surface-mounted device board assembly operations. Each machine can install 1500 parts per hour, compared to 200 per hour by human assemblers.

The company said mounting components by hand is both fatiguing and prone to errors. As many as 160 components with up to 60 part numbers are used on a single board—but once they are out of their bags, assemblers can't identify them visually.

The robots are faster and more accurate, Teradyne said. The company has reassigned the displaced human installers to package bulk parts that do not come prepackaged for insertion and to finish and touch-up the robot-assembled boards. Humans are still needed to install electrically matched components, the company said.

For more information, contact Teradyne, 21255 Califa St., Woodland Hills, CA 91367; (818) 888-4850.

Reader Service Number 39